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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/917,639
Filing Date: July 31, 2001
Appellant(s): CHEUNG ET AL.

Cheung et al
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 2, 2007 appealing from the Office action mailed October 31, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,724,646	GANEK ET AL	03-1998
6,018,359	KERMODE ET AL	01-2000

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claims 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganek et al. (5,724,646, of record) [Ganek] in view of Kermode et al. (6,018,359, of record) [Kermode].

Regarding claim 26, Ganek discloses a system for transmitting data over a network to clients having a latency time to initiate transmission of said data to the client (said latency time represented by $T_{lead\text{-}in}$, see col. 3 line 66 – col. 4 line 32), including:

an anti-latency signal generator (the generators themselves are not specified, as they are well known components, col. 4, lines 43-51) for generating anti-latency data streams containing a leading portion of data for receipt by a client (secondary channels deliver the beginning portion of available programs, col. 6, lines 54-62 and col. 8, lines 7-9); and

an interactive signal generator for generating interactive data streams containing a remaining portion of said data for the client to merge into after receiving a portion of an anti-latency data stream (the streams sent to a user over the primary channels, col. 6, lines 54-62 and col. 7 line 50 – col. 8 line 4), wherein:

said data has a length R, and is fragmented in to K segments each requiring a time T to transmit over the network (the streams are MPEG compressed streams, wherein the TS packets of an MPEG stream are all of

equal size, and thus requiring an equal amount of time to transmit over the network, col. 6, lines 12-25, and any arbitrarily selectable number of TS packets represents a segment, wherein K is the total number of these segments), the interactive data streams include N interactive data streams (and however many primary channels are used equals N), wherein each of the N interactive data streams are repeated continuously within said interactive data streams (col. 3; lines 50-65) and wherein each successive interactive data stream is staggered by an interactive time interval = KT/N (col. 7 line 49 – col. 8 line 4, wherein the time interval, TSTAG is 10 minutes, which is equal to the total length of the video (KT) of 1 hour (60 minutes) divided by the number of interactive streams (6), as 10 = 60/6), and the anti-latency data streams include M anti-latency data streams (however many secondary channels are used equals M).

Ganek fails to disclose the anti-latency data streams 1 to M are generated such that an m^{th} anti-latency data stream has F_m segments, wherein F_m is an m^{th} Fibonacci number and the F_m segments are repeated continuously within the m^{th} anti-latency data stream.

In an analogous art, Kermode teaches a video distribution system (col. 5, lines 15-25) wherein the leading portions of a distributed video are provided over a plurality of channels (col. 5 line 59 – col. 6 line 13), wherein each successive channel has an amount of data repeated within it according to a Fibonacci sequence (col. 6 line 45 – col. 7 line 20, wherein the "segments" listed are equivalent to the "frames" denoted in appellant's disclosure, figs. 6 and 7, thus

the number of any data unit per "segment" is the Fibonacci number of the equivalent stream), ensuring that playback does not occur before the beginning of a segment is loaded (col. 6, lines 38-44 and col. 7 lines 21-44) while more efficiently utilize available buffer space (col. 7 line 66 – col. 8 line 18).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek to generate the anti-latency streams such that an m^{th} anti-latency data stream has F_m segments, wherein F_m is an m^{th} Fibonacci number and the F_m segments are repeated continuously within the m^{th} anti-latency data stream, as taught by Kermode, for the benefit of ensuring that playback does not occur before the beginning of a segment is loaded while efficiently utilizing available buffer space when accessing said streams.

Regarding claim 27, Ganek and Kermode disclose the system of claim 26, wherein the client is connected to the m^{th} and $(m+1)^{th}$ anti-latency data streams when the client raises a request for said data, the data in the m^{th} and $(m+1)^{th}$ anti-latency data streams is buffered in the client, and the client is subsequently connected to successive anti-latency data streams until all data in the leading portion is received by the client (Kermode, col. 5 line 59 – col. 6 line 13).

Regarding claim 28, Ganek and Kermode disclose the system of claim 27, wherein the client is connected to one of the N interactive data streams after all data in the leading portion is received by the client (Ganek teaches once the

receiver has received the content of the secondary channel, it switches over to a primary channel, col. 8 line 66 – col. 9 line 8).

Regarding claim 29, Ganek and Kermode disclose the system of claim 26, wherein each of the N interactive data streams contains the whole set of said data having K segments (Ganek teaches the video program is provided on each primary channel, col. 6, lines 54-62).

Regarding claim 30, Ganek and Kermode disclose the system of claim 26, but fail to disclose each of the N interactive data streams contain the remaining portion of said data only.

However, Kermode further discloses placing only the remaining portion of video data on a stream to which a receiver merges into after receiving the initial streams (see fig. 4), maintaining a minimum needed bandwidth for each channel (col. 9, lines 3-9, bandwidth requirements are reduced when the amount of data transmitted per channel is reduced).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system of Ganek and Kermode to place only the remaining portion of said data onto each of the N interactive data streams, as taught by Kermode, for the benefit of maintaining a minimum needed bandwidth for each channel and reducing the overall bandwidth needed by the system.

Regarding claim 31, Ganek and Kermode disclose the system of claim 26, wherein $F_M \geq 2K/N$ (since K is any arbitrarily selectable number of TS packets, a value of K = 0.5N satisfies the equation for any positive whole integer value of M).

Regarding claim 32, Ganek and Kermode disclose the system of claim 26, wherein m stars from 1 (Kermode, col. 6, lines 45-60, wherein the series of f(n) starts with 1, thus n, the segment size, starts with one).

(10) Response to Argument

MPEP 2142 states:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on appellant's disclosure.

First, the motivation to combine the reference teachings of Ganek and Kermode is the desire to reduce the buffer size. In Ganek, col. 6 line 63 - col. 7

line 23, ("The buffer storage is preferably done in a recirculating manner in order to minimize the size of the buffer 180 required."), Ganek teaches a desire to reduce buffer size, but states that the preferred buffer size needs to be large enough to hold a full length of content of the fixed stagger time interval. The system disclosed by Kermode uses Fibonacci sequences to break up a fixed length of video content such that the buffer requirement is only 20% of the length of the video in question (see Kermode, col. 7 line 66 - col. 8 line 18).

Second, the reasonable expectation of success comes from the way in which Ganek proposes a VOD system. Ganek separates the streams carrying the video content into two distinct groups. A primary group of interactive streams which contain the entire video, and a secondary group of anti-latency streams that contain the first portion of the video (Ganek, col. 7 line 50 - col. 8 line 16). It is to these anti-latency streams that the teachings of Kermode are applied, as described in the final rejection mailed on June 6, 2007. The first group of interactive streams are not modified in view of Kermode at all, because as stated, the motivation comes from a desire to reduce buffer size, which is only affected by the size of the segments in the second group of streams. Therefore, the modification to Ganek is to apply Kermode's Fibbonacci sequencing scheme for presenting a full length of content to the anti-latency content disclosed by Ganek. Put simply, the first 10 minute segment found in the secondary program channels of Ganek is the content which is split up according to Kermode's scheme,

reducing the buffer requirement from holding 10 minutes worth of content to 2 minutes (20%) worth of content.

Lastly, the requirement that the prior art references when combined must teach or suggest all the claim limitations, is explained in detail in the grounds of rejection presented herein.

A. Claim 26

Appellant's argue that motivation is lacking, absent prior knowledge of appellant's disclosure, to combine the Ganek and Kermode disclosures, based on an assertion that Ganek and Kermode are based on incompatible operating principles. Appellant's argument hinges on the disclosure of Ganek that establishes that the content on each of the secondary channels is the same (page 4, second paragraph), whereas Kermode discloses the content on each channel to be different (page 4, third paragraph). Appellant's argue that an attempt to combine the teachings of the two would "destroy the principle of operation of the Ganek patent" (page 5, paragraph 1).

In response, the "operating principle" of the Ganek patent is not based exclusively upon placing common information on a series of channels, but on the separation of content into two distinct sets of channels. The secondary set of channels is used only to present content to a user as quickly in response to a request in order to synchronize the user with one of the primary set of channels which contain the entire program. Adjusting the manner in which the secondary

channel information is delivered to a user does nothing to change the operating principle of Ganek, because the only purpose of these secondary channels is to present content to a user for as long as necessary until the proper time for switching over to the primary channel.

Further, appellant's argue that employing the technique of Kermode would no longer require the use of two different sets of channels, as Kermode teaches sending the entire program over the one set of channels.

In response, as stated above, the application of the Kermode reference, insofar as the application of Fibonacci sequencing is concerned, is applied only to the anti-latency streams, because the purpose of modifying Ganek with Kermode was to reduce the buffer requirements, which only affects the anti-latency streams.

B. Claim 30

Here, appellant's maintain the position that any combination of the Ganek and Kermode references would "totally eviscerate" the operating principle of the Ganek reference (page 6).

In response, the compatibility of the Ganek and Kermode references has been addressed in detail above. The further modification of Ganek in view of Kermode, as made for claim 30, is made to address bandwidth issues, as Kermode provides a teaching that channel bandwidth can be conserved if a stream does not contain the data found in a previously tuned to stream. The

operating principle of Ganek remains that of two distinct groups of channels, with the modification reducing the amount of bandwidth occupied by the first group by simply not including the anti-latency information found in the second group.

C. Claim 31

Here, appellant's argue that the office action's analysis relies upon a necessary relationship between the values K and N, which is not found in the prior art references.

In response, K is a completely arbitrary value, which is not in any way limited or clearly defined in the claims. As such, the value of K is essentially both unknown and unknowable, as it never has an actual value until a practitioner actually implements the described system and chooses a value for K. As such, without a more clear definition or even prescribed boundaries for the value K, the examiner is forced to assume K can literally be any positive whole number, because a video program can be segmented into any desired number of segments. There does not need to be any relationship between K and N, because there will always be a value of K available (because it is undefined) to just plug into the equation to satisfy the claimed requirement.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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